# Questions & Responses

# Wind Targeted Solicitation
## *"Expanded Wind Regime Turbine Technology and Intermittency Management Demonstration"*

All Applicants are reminded to check the Commission website regularly regarding schedule updates and solicitation amendments.

> Amendment 1: Revised Terms & Conditions (T&Cs) posted. T&Cs in the manual are no longer valid. Please review the current version as it may affect the application.

**GRANT TERMS & CONDITIONS**

Q: Are there royalty provisions?

A: Yes, royalty provisions are provided in the Revised Terms & Conditions (T&Cs) which are posted on the Commission website. The T&Cs section of the manual in Exhibit E-1 is no longer valid. Please review the current version of the T&Cs as it may affect your application.

Q: This grant is to develop a commercially viable low wind speed turbine and demonstrate it along with an intermittent management capability. Is the developer permitted to make a profit under this solicitation? Can the royalty situation be clarified?

A: Profit is a good incentive for anyone. Although profit is not allowed as part of the grant agreement, organizations are most certainly permitted to earn future profits from the results of the grant agreement. Refer to the new Terms and Conditions contained in Amendment 1 for the solicitation on royalty issues.

**ADMINISTRATIVE**

Q: Any chance that our electronic copy could be submitted in .pdf format rather than Microsoft Word. Submitting as pdf would ensure that the electronic copies and paper copies match exactly. Also, it would allow up to prepare the document using Adobe Framemaker, the application we use for proposal development.

A: In response to your question, the solicitation manual clearly states Microsoft Word and Excel formats for the proposal (text, forms, worksheets). You can certainly create a .pdf version of the entire proposal and submit it along with the Word and Excel electronic formats on the same CDrom. We're not able to access files in Framemaker so make sure they are readable using .pdf or other common graphics formats (.jpg, .bmp). Please make sure all files are clearly labeled.

Q: The amount of time available to put together such a proposal seems rather short. Is there a possibility of an extension?

A: Should be sufficient time for an applicant with a demonstration capability. Applicants have 45 days to respond. Other solicitations have gone out with only 30 days. Late applications will not be accepted and there are no plans for an extension.

Q: When would we expect grant agreements to be in place and money available for use?
Project funds are technically available after the Commission Business meeting currently anticipated for Dec. 15, 2004. However, this is an estimated date. Depending on the completeness of the applicant's proposal drafting and finalizing the Grant Agreement with the Commission is anticipated to in the January to March 2005 timeframe.

Q: Do you want the Original hardcopy bound?
The solicitation says bound however we actually prefer the original hardcopy *unbound*.

Q: Can I get contact information for attendees of the workshop?
A: List of attendees

| | Name | E-mail | Phone # |
|---|---|---|---|
| 1 | Abas Goodarzi | abas@ushybird.com | (310) 375-7555 |
| 2 | Manuel Alvarez | alvarem@sce.com | (916) 441-2369 |
| 3 | Amir Mikhail | amikhail@clipperwind.com | (805) 690-3267 |
| 4 | Andrew Kruse | andy@windenergy.com | (928) 779-9463 |
| 5 | Brian Berndt | brianbe@calpine.com | (707) 431-6266 |
| 6 | Cliff Murley | cmurley@smud.org | (916) 732-5118 |
| 7 | Charles Post | cpost@windharvest.com | (415) 663-8565 |
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| 13 | Hal Romanowitz | hal@rwitz.net | (661) 822-6853 |
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| 17 | Kevin Cousineau | kcousineau@clipperwind.com | (805) 690-3267 |
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| 19 | Keith White | kwhite@energyonline.com | (510) 524-9177 |
| 20 | Larry Miles | mileslw@windturbinecompany.com | (425) 637-1470 |
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| 22 | Paul Harrigan | pmharrigan@gcpower.com | (831) 425-9463 |
| 23 | Brent Scheibel | service@windtesting.com | (611) 332-4003 |
| 24 | Steve Steingraeber | stevesteingraeber@emerox-intl.com | (909) 944-4100 |
| 25 | Tracy Livingston | tracy@windtowercomposites.com | (435) 657-1347 |
| 26 | P. Campbell | www.krcd.org | (916) 237-5567 |

Q: Must the 3-D display model required of each proposal project be submitted with the proposal application?
A: No, it is a product listed as part of the project.

Q: Much of the information requested in the Financial Information Form (Attachment A-3), e.g. federal tax returns, might be considered confidential. Will the Commission treat the information in Attachment A-3 as confidential?

Anything the applicant feels that needs to be treated as confidential, please submit under Volume 3. Note that confidentiality cannot apply to the entire application. Refer to the solicitation manual.

Q: The table on page 2 of 10 of Attachment A-7.1 refers to G&A Overhead. What does that mean?

A: G&A refers to General and Administrative Costs. Some applicants may have this additional category of indirect cost to support administrative and infrastructure of the company. Applicants are not required to have G&A costs. Rather, Applicants should propose budgets that are consistent with their accounting practices and Generally Accepted Accounting Principles (GAAP).

Q: What is T&D?

A: T&D refers to Transmission and Distribution lines.

Q: Are capital expenditures allowable?

A: Capital expenditures are allowable costs as long as they are allocable to the project being funded and incurred within the project term. The Energy Commission highly recommends that capital expenditures be classified as match share so there are no issues with disposition of the property at the end of the agreement.

Q: When evaluating the match fund contributions, is there any difference between how capital investments are treated compared to other types of match fund expenditures?

A: As part of the scoring process, criterion 8 states that the appropriateness of the proposed project and level of match funds will be evaluated based on the list provided. An Applicant's score may be affected by the security of the proposed match funds. Note also that a financial review of the Applicant will be conducted to determine the ability of the Applicant to successfully provide match funds and complete the project.

Q: NREL includes a standardized COE determination model. Do we have a standardized model?

A: No, we are not asking Applicants to use a standardized cost determination model. You are welcome to use NREL model however the model may not reflect what is typically done in practice (industry or the marketplace). Applicants are encouraged to use a model that fits within the Applicant's business practices and can be substantiated.

Q: NREL has a cost adder relating to replacement cost. Given the targeted Affordability COE of $.05/kWh, should we compute this based on the NREL cost adder or amortize over the 20-year life of the system?

A: You are welcome to use NREL model however the model may not reflect what is typically done in practice (industry or the marketplace). Applicants are encouraged to use a model that fits within the Applicant's business practices and can be substantiated.

Q: Does the Affordability COE adder listed in the solicitation targets apply only to the IMC?

A: Yes, as indicated by the column header, that target is listed under the IMC focus area.

Q: How does the $.04 cost adder for IMC apply to the overall COE?

A: It should be figured in as an additive cost to the overall COE of the turbine.

Q: Under the screening criteria, must all solicitation targets be met?

A: In general, all solicitation targets and requirements as stated must be met. As clarification for what was discussed at the workshop, the Eligibility Screen criteria states that the project must address all of the goals identified in Table 1 of Section III to be considered eligible. It does not stipulate that all solicitation targets must be met but rather must be addressed (i.e. how project will meet or why project cannot meet target). Note however, the scoring criteria will take into consideration how well the solicitation meets the target goals. Projects that do not meet many of the goals in Table 1 will most likely not rank as high as another project that meets all of the goals.

Q: Are there scoring criteria relating to the relative value of time shifting to firm power delivery versus time shifting to match peak load? Which of these options would the Commission scoring team give greater weight?

A: Though not specifically stated in the solicitation, co-locating wind facilities and deferring transmission improvement costs would provide significant benefit the system, region and local area. System benefits of that nature and solutions that address peak load generation capability are economically more attractive and valuable to the industry and therefore to the Commission. However, just because the project addresses peak load generation needs, it does not necessarily make it a high rank or eligible project. The proposed project will be evaluated and scored as a complete package.

Q: How many grants will be awarded under this solicitation? The total amount available and size limit per proposal suggest possibly three. What if there are many smaller proposals deemed worthy of award? Can this process accommodate this possibility? Is the total to be awarded under this solicitation limited to $5 million? Can it be increased?

A: We anticipate 2-3 awards however the dollar amount and number of applicants will depend on the responses we receive. All Applicants will be ranked and eligible applicants will be awarded based on their rank (not by proposed dollar amount). The $5 million dollar amount is as a not to exceed amount but there is no minimum that the Commission has to award. At this time, there are no plans to increase this amount.

**TECHNICAL**

Q: What is the benefit to the system? It is difficult to do on a statewide basis. Will constraint data be available?

An example of system benefits includes deferring transmission upgrade costs by providing dispatchable electricity closer to demand centers. If it's difficult to do on a statewide basis for the project, describe the local or regional benefits. Performance

targets are provided in the solicitation manual on pg 11. The applicant must identify applicable constraints base on the proposed demonstration project.

Q: Is it necessary that the low wind speed technology with IMC actually be located in an NREL class 3 or 4 (at 10 meter) area, or could it be located in a better wind regime, with data being selectively processed to mimic a class 3 zone? Or would it be acceptable if it were evaluated during a class 3 season in what would otherwise be a class 5 or better zone?

The solicitation focuses on demonstration of new turbine technologies designed to perform in low speed wind regimes. Though data can be selectively processed to mimic a Class 3 zone, you'll need to consider whether or not you can appropriately demonstrate a low wind speed technology coupled with IMC.

Q: The focus of this project seems to be on larger scale wind turbines and installations. Is there any room for proposals in the 3 to 10 kW range?

A: You are correct in that the focus is on larger scale winds turbines and installations. Performance parameters are clearly stated in the solicitation manual and if these are not addressed, then the project will not meet the eligibility criteria.

Q: Is the 750 kW @ 2hr discharge performance goal average power over day or the two hour discharge time?

A: Performance is measured over the period of discharge.

Q: It is clear from the California Wind Maps that the State has a significant wind resources off-shore vs. on-shore. On the other hand, California does not have the shallow coastal waters that would make sea floor anchored towers feasible. Would a proposal incorporating a floating off-shore platform qualify for this solicitation.

A: The purpose of this solicitation is to accelerate development into California's low wind speed resource areas which are clearly not offshore. Though the statement is true, the current solicitation may not be the most appropriate conduit to address this issue.

Q: If a turbine proposed for off-shore development is tested on-shore, could this be evaluated as if it were an off-shore turbine.

A: It would be difficult to test an off-shore turbine onshore since the wind conditions and other environmental conditions would be different. A turbine tailored for off-shore should probably be demonstrated off-shore.

Q: Why was an NREL Class 3 at 10 meters chosen as the standard for low wind speed areas for this solicitation? Why not 30 meters?

A: The requirement provides a guide for selecting locations for demonstration. 30 meters would be more restrictive than 10 meters and we encourage as many potential options as possible.

Q: It seems that large (>500 kW) turbines would be required to meet the targets of this solicitation. Is this true? Would one or more smaller turbines be able to pass the screening criteria?

A: Yes, larger turbines would better meet the targets of this solicitation.

Q: The solicitation targets could be read to suggest that a 750 kW rated system would be required to pass the screening criteria. Is this the case? Is there a minimum required rating for turbines under this solicitation?
A: The solicitation targets suggest that a large-scale system would better address the screening criteria but does not stipulate a minimum required rating. The Eligibility Screening states that the project must address all the goals identified in Table 1 of Section III. Cost and performance goals need to be addressed.

Q: It is important to firm up intermittent wind. This can be done a considerable distance from wind facility, consuming additional transmission resources. Or it can be co-located with the wind facility and utilize the transmission already allocated to the wind facility. How will projects that address transmission utilization improvement by being co-located be accounted for in the scoring criteria?
A: Yes, it is important to firm up intermittent wind. Specifically, it is important to have a solution for what to do when the wind stops blowing. Though not specifically stated in the solicitation, co-locating wind facilities and deferring transmission improvement costs would provide significant benefit the system, region and local area. System benefits of that nature and solutions that address peak load generation capability are economically more valuable to the industry and therefore to the Commission.

Q: How will high-risk/high-reward projects fair in the scoring process? How much risk is acceptable?
A: The focus here is a demonstration project for potentially near-market products. High-risk/high-reward projects tend to be long-lead time, require more R&D and would probably not fair as well as those projects that have potential to commercialize in the near term and provide benefits. Acceptability of risk is deferred to the Applicant to define in a commercialization business plan.

Q: Will building-mounted wind turbines be permitted under this solicitation?
A: Though not specifically stated, building mounted wind turbines most likely will not fair as well as other Applicants with more typical low wind speed applications in terms of being able to meet the performance goals. Applicants are asked to refer to and consider the performance criteria and whether or not, the proposed technology is able to address the goals and demonstrate competitive system benefits.

Q: Is there a time scale associated with “firming”?
A: Performance targets indicate a two hour discharge however these are meant as minimum guidelines. The most appropriate time-scale for “firming” must be determined by the Applicant based on the proposed technologies and system benefits.

Q: The IMC target for Electricity conversion efficiency is 50%. Is it correct to assume that this applies to the IMC unit only?
A: Yes, the IMC electricity conversion efficiency must be better than 50%.

Q: Page 4 of 54 of the Application Manual refers to using tailored power purchases as a potential firming option. How is this an IMC technology?
A: It represents an integral component of an IMC solution. For example an Applicant can choose to develop a software integration program that manages the wind and IMC capability in such as way as to "firm" needed generation.

Q: For storage, there seem to be two options. One is to purchase off-the-shelf systems (batteries) and simply incorporate into the generating system. The other is to scale-up a technology that has not been scaled up for this purpose. The latter option is high risk but promises potentially larger long-term benefits.
A: Maybe, maybe not. It is up to the Applicant to determine acceptability of risk and commercialization potential in their business plan. The focus here is a demonstration project for potentially near-market products. High-risk/high-reward projects tend to need long-lead time, require more R&D and would probably not fair as well as those projects that have potential to commercialize in the near term and provide benefits.

**RESOURCE/DATA RELATED**

Q: Does 20% renewables defined by the RPS include hydro?
The RPS does not include large hydro but there is language that talks about small-hydro with no new diversions.

Q: Does the Commission publish any wind shear profiles?
The Commission does not currently publish wind shear profiles. However the Commission expects to be able to provide sodar results for 5 locations in California by 2005.

Q: Does the Commission have access to diurnal (hourly, 10 minute etc.) data that can be made available for this project?
A: No, not at this time.

Q: Has the Commission done or know of any studies verifying that the solicitation targets are attainable? Where did these targets come from?
A: Yes, the targets are attainable. Numerous studies by national laboratories, the U.S. Department of Energy and industry consultants were used to help develop these targets.

Q: Does the Commission know of any commercially available storage capability that can satisfy the $.04/kWh target of this solicitation?
A: Refer to the EPRI/DOE Storage Handbook. A reference copy is available at the Commission Library. (citation will be posted)

**APPLICANT COMMENTS**

Comment: Given that with the 20% by 2017 requirement of the RPS and the large role wind is expected to play in meeting this goal, perhaps it is time to stop thinking in terms of making wind conform to the requirements of the grid. It might be time to start making the rest of the electricity system respond to the presence of wind generated electricity.